BIOMETRIKA

FOUNDED BY

W. F. R. WELDON, FRANCIS GALTON AND KARL PEARSON

MANAGING EDITOR

E. S. PEARSON

ASSOCIATE EDITORS

M. G. KENDALL JOHN WISHART

in consultation with

HARALD CRAMÉR R. C. GEARY

J. B. S. HALDANE D. G. KENDALL

VOLUME 41

1954

ISSUED BY

THE BIOMETRIKA OFFICE, UNIVERSITY COLLEGE, LONDON

PRINTED AT THE UNIVERSITY PRESS, CAMBRIDGE

UNIVERSITY OF UTAH LIBRARIES

PRINTED IN GREAT BRITAIN

CONTENTS OF VOLUME 41

Memoirs and Miscellanea

PAGE

ABDEL ATY, S. H. Tables of generalized k-statistics 253

ABDEL ATY, S. H. Approximate formulae for the percentage points and the probability integral of the non-central χ^2 distribution 538

AITCHISON, J. and BROWN, J. A. C. An estimation problem in quantitative assay 338

ANSCOMBE, F. J. and PAGE, E. S. Sequential tests for binomial and exponential populations 252

ARBOUS, A. G. and SICHEL, H. S. New techniques for the analysis of absenteeism data 77

BARNARD, G. A. Simplified decision functions 241

BARTHOLOMEW, D. J. Note on the use of Sherman's statistic as a test of randomness 556

BECHHOFER, R. E., DUNNETT, C. W. and SOBEL, M. A two-sample multiple decision procedure for ranking means of normal populations with a common unknown variance 170

BLOM, G. Transformations of the binomial, negative binomial, Poisson and χ^2-distributions 302

BOX, G. E. P. and HUNTER, J. S. A confidence region for the solution of a set of simultaneous equations with an application to experimental design . . 190

BRADLEY, R. A. Rank analysis of incomplete block designs. II. Additional tables for the method of paired comparisons 502

BROADBENT, S. R. The quotient of a rectangular or triangular and a general variate 330

BROWN, J. A. C. (*See* AITCHISON, J.)

CADWELL, J. H. The statistical treatment of mean deviation 12

CHANDA, K. C. A note on the consistency and maxima of the roots of likelihood equations 56

COX, D. R. & SMITH, W. L. On the superposition of renewal processes . . 91

COX, D. R. The design of an experiment in which certain treatment arrangements are inadmissible 287

COX, D. R. The mean and coefficient of variation of range in small samples from non-normal populations 469

DAVID, F. N. and JOHNSON, N. L. Statistical treatment of censored data. Part I. Fundamental formulae 228

DAVID, H. A. The distribution of range in certain non-normal populations . 463

DAVID, H. A., HARTLEY, H. O. and PEARSON, E. S. The distribution of the ratio, in a single normal sample, of range to standard deviation 482

PAGE

DAWSON, R. B. A simplified expression for the variance of the χ^2-function on a contingency table 280

DUNNETT, C. W. and SOBEL, M. A bivariate generalization of Student's t-distribution, with tables for certain special cases 153

DUNNETT, C. W. (*See* BECHHOFER, R. E.)

FIELLER, E. C. and HARTLEY, H. O. Sampling with control variables . . 494

FUCKS, W. On Nahordnung and Fernordnung in samples of literary texts . . 116

GHURYE, S. G. and ROBBINS, H. Two-stage procedures for estimating the difference between means 146

GUEST, P. G. Grouping methods in the fitting of polynomials to equally spaced observations 62

HAMMERSLEY, J. M. and MORTON, K. W. The estimation of location and scale parameters from grouped data 296

HARLEY, B. I. A note on the probability integral of the correlation coefficient . 278

HARTLEY, H. O. (*See* DAVID, H. A.)

HARTLEY, H. O. (*See* FIELLER, E. C.)

HASKEY, H. W. A general expression for the mean in a simple stochastic epidemic 272

HILL, I. D. The distribution of the regression coefficient in samples from a non-normal population 548

HOEL, P. G. A test for Markoff chains 430

HUNTER, J. S. (*See* BOX, G. E. P.)

IRWIN, J. O. A distribution arising in the study of infectious diseases . . 266

IYER, P. V. KRISHNA and KAPUR, M. N. Probability distributions arising from points on a line 553

JAMES, G. S. Tests of linear hypotheses in univariate and multivariate analysis when the ratios of the population variances are unknown . . . 19

JENKINS, G. M. An angular transformation for the serial correlation coefficient 261

JENKINS, G. M. Tests of hypotheses in the linear autoregressive model. Part I . 405

JOHNSON, N. L. (*See* DAVID, F. N.)

JONCKHEERE, A. R. A distribution-free k-sample test against ordered alternatives 133

KAMAT, A. R. Distribution theory of two estimates for standard deviation based on second variate differences 1

KAMAT, A. R. Moments of the mean deviation 541

KAPUR, M. N. (*See* IYER, P. V. KRISHNA.)

KENDALL, M. G. Note on bias in the estimation of autocorrelation . . . 403

KENDALL, M. G. Two problems in sets of measurements 560

PAGE

LIEBLEIN, J. Two early papers on the relation between extreme values and tensile strength 559

LORD, R. D. The use of the Hankel transform in statistics. I. General theory and examples 44

LORD, R. D. The use of the Hankel transform in statistics. II. Methods of computation 344

MARRIOTT, F. H. C. and POPE, J. A. Bias in the estimation of autocorrelations . 390

MAYNE, A. J. Some further results in the theory of pedestrians and road traffic . 375

MORTON, K. W. (*See* HAMMERSLEY, J. M.)

NELDER, J. A. The interpretation of negative components of variance . . 544

PAGE, E. S. Continuous inspection schemes 100

PAGE, E. S. (*See* ANSCOMBE, F. J.)

PATANKAR, V. N. The goodness of fit of frequency distributions obtained from stochastic processes 450

PEARSON, E. S. (*See* DAVID, H. A.)

PLACKETT, R. L. A reduction formula for normal multivariate integrals . . 351

POPE, J. A. (*See* MARRIOTT, F. H. C.)

ROBBINS, H. (*See* GHURYE, S. G.)

RUBEN, H. On the moments of order statistics in samples from normal populations 200

SHENTON, L. R. Inequalities for the normal integral including a new continued fraction 177

SICHEL, H. S. (*See* ARBOUS, A. G.)

SMITH, W. L. (*See* COX, D. R.)

SOBEL, M. (*See* DUNNETT, C. W.)

SOBEL, M. (*See* BECHHOFER, R. E.)

SOMERVILLE, P. N. Some problems of optimum sampling 420

STERNE, T. E. Some remarks on confidence or fiducial limits 275

SUNDRUM, R. M. On the relation between estimating efficiency and the power of tests 542

THOMPSON, H. R. A note on contagious distributions 268

TRICKETT, W. H. and WELCH, B. L. On the comparison of two means: further discussion of iterative methods for calculating tables 361

WELCH, B. L. (*See* TRICKETT, W. H.)

WHITTLE, P. On stationary processes in the plane 434

WISE, M. E. A quickly convergent expansion for cumulative hypergeometric probabilities, direct and inverse 317

WISHART, J. The factorial moments of the distribution of joins between line segments 555

Book Reviews

PAGE

ANDERSON, R. L. and BANCROFT, T. A. *Statistical Theory in Research.* (F. N. DAVID) 283

BELL, D. A. *Statistical Methods in Electrical Engineering.* (N. L. JOHNSON) . 282

BROSS, I. D. J. *Design for Decision.* (N. L. JOHNSON) 283

COCHRAN, W. G. *Sampling Techniques.* (F. N. DAVID) 565

DAVID, F. N. *A Statistical Primer.* (D. R. WILKIE) 281

DOOB, J. L. *Stochastic Processes.* (F. N. DAVID) 284

KENDALL, M. G. *Exercises in Theoretical Statistics.* (F. N. DAVID) 565

KITAGAWA, T. and MITOME, M. *Tables for the designs of factorial experiments.* (N. L. JOHNSON) 567

LINDLEY, D. V. and MILLER, J. C. *Cambridge Elementary Statistical Tables.* (B. L. WELCH) 285

MAINLAND, D. *Elementary Medical Statistics.* (P. ARMITAGE) 281

NATIONAL BUREAU OF STANDARDS. *Publications of the U.S. Department of Commerce, Applied Maths. Series* 23, 31. (E. S. PEARSON) 285

RAO, C. R. *Advanced Statistical Methods in Biometric Research.* (F. N. DAVID) . 283

RESEARCH ASSOCIATION OF STATISTICAL SCIENCES, Kyusu University, Japan. *Statistical Tables.* (J. WISHART) 566

ROMIG, H. G. 50–100 *Binomial Tables.* (E. S. PEARSON) 286

WAUGH, A. E. *Statistical Tables and Problems.* (F. N. DAVID) 565

YATES, F. *Sampling Methods for Censuses and Surveys.* (A. STUART) 284